

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Wu et al.)	Examiner: Ernst V. Arnold
)	
Serial No: 10/686,937)	Group Art Unit: 1616
)	
Filed: October 16, 2003)	Confirmation No: 4594
)	
Title Method for Reducing Odor)	Deposit Account: 04-1403
Using Coordinated Polydentate)	
Compounds)	Customer No: 22827

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

In conjunction with the filing of a Notice of Appeal, Applicants respectfully request review of the basis of rejections of the pending claims.

In the Final Office Action, claims 1, 2, 4, 5, 7, 9-23, and 25-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Abstract of JP 04290547¹ (JP '547) in view of "Binding of Cupric Ion by Crosslinked Polyethylenimine", J. Polym. Sci. Polym. Chem. Ed. 1985, vol. 23, pg. 2875-2878 (Takagishi et al.), and with respect to claims 17-20 and 25, EP 1214878 (Stoddart et al.), and with respect to claims 9-12 U.S. Patent No. 4,275,054 (Sebag et al.), and with respect to claims 13-16 and 26-28, U.S. Patent No. 5,120,693 (Connolly).

JP '547 is directed to a deodorant that comprises a silicic acid gel structure containing a metal salt. JP '547 indicates that bentonite and a complex of isobutene-maleic anhydride copolymer and polyethyleneimine may be added to the gel. The

¹ Derwent-ACC-NO: 1992-393132

Office Action alleges that "it is the Examiner's position that PEI will complex with the metal ions in the absence of evidence to the contrary." Applicants respectfully disagree. First, JP '547 indicates that a **complex** of isobutene-maleic anhydride copolymer and polyethyleneimine may be added to the gel after formation. There is no indication in JP '547 that the polyethyleneimine in the complex would contain any available ligands in order to additionally complex with metal ions. Second, even **if** polyethyleneimine contained ligands available to complex with free metal ions, it can not be said that the "PEI will complex with the metal ions" as the isobutene-maleic anhydride/PEI complex is added to the gel after the formation of the silicic acid gels which "enclose" the metal salts.

In response to the first argument, the Office Action points to Applicant's specification at pg. 25, lines 14 and 15 that states, "The PEI-metal complexes (copper, iron (III), and zinc) were prepared by simply dissolving the corresponding metal salts in the PEI solution." Based on this, the Office Action opines:

So, all that is required to make these complexes is to have the two ingredients in the presence of one another. The primary reference has both of these ingredients in the presence of one another. Since the reaction to form the complex is so simple then the Examiner can only reasonably conclude that when a metal ion contacts PEI a coordination complex is formed.

First, Applicants certainly do not disclose that simply "hav(ing) the two ingredients in the presence of one another" is enough to generate the complex. Second, Applicants go on to describe the preparation of the PEI-Ag complex including slow addition of PEI and 24 hours of stirring in addition to incorporating the procedure as described in WO 02/30204. Third, the Office Action has failed to even respond to Applicant's actual argument. As disclosed by JP '547, a **COMPLEX** of isobutene-maleic anhydride

copolymer and polyethyleneimine is added to the gel after formation. Thus, the polyethyleneimine is already complexed. There is no disclosure or suggestion in JP '547 that the isobutene-maleic anhydride copolymer/polyethyleneimine complex is "partially" complexed in order to have polyethyleneimine ligands remaining available in order for the polyethyleneimine component to **additionally** complex with metal ions.

In response to the second argument, the Office Action states:

there is nothing to suggest that water soluble liquid PEI would not mix into the aqueous gel and come into contact with metal salts dissolved therein. Thus the Examiner has provided clear articulated reasoning with sound chemical rationale in contrast to Applicants assertions without proof.

Applicants respectfully disagree. JP '547 discloses in the "Abstract" that "a silicic acid gel structure (contains) the metal salt(s)." Furthermore, JP '547 discloses in the "Use/Advantage" section that "since the metal salts are enclosed in the vitreous structure of the silicic acid gels, the deodorants are safe even when they touch directly human beings and animal." Use of this language, particularly "enclosed" and "vitreous structure" seemingly would be contrary to the Office Action's assertion that the PEI would mix into the gel and come in contact with the metal salts. For instance, one skilled in the art appreciates that vitreous is synonymous with "glassy" or "glass-like." Furthermore, one skilled in the art also appreciates that "vitreous silica" is a chemically stable and refractory glass made from silica. (See, e.g., Merriam-Webster Online Dictionary). Thus, these disclosures combined with the teaching that the compound is "safe" even when touched directly by humans or animals tends to discount the stance that "there is nothing to suggest that water soluble liquid PEI would not mix into the aqueous gel and come into contact with metal salts dissolved therein." On the contrary, there appears to be nothing to suggest the opposite.

Furthermore, as correctly noted in the Office Action, JP '547 fails to teach crosslinking the polydentate compound rendering the compound substantially insoluble in water. Nevertheless, in an attempt to render independent claims 1 and 22 obvious, the Office Action cites Takagishi et al. as allegedly disclosing the motivation to crosslink the claimed polydentate compound. Applicants respectfully disagree. Takagishi et al. is directed to adsorbing metal ions in water utilizing PEI. As disclosed in Takagishi et al., the PEI is crosslinked to make the polymer insoluble in water. This allows the PEI to adsorb metal ions out of solution. In stark contrast, in the present application, the PEI is complexed with the metal ions and crosslinked to, for instance, "enhance its adherence to the surface of a substrate when contacted with water." Pg. 11, lines 21-23.

Applicants respectfully submit that one of ordinary skill in the art would not look to the disclosure of Takagishi et al. that teaches adsorbing metal ions in aqueous solutions and combine with the isobutene-maleic anhydride/PEI complex of JP '547 in order to somehow crosslink the PEI section of the complex in an attempt to yield Applicants' claimed invention. Applicants note that it is improper to simply pick and choose just those components needed from a prior art reference to combine in a Section 103 combination. Only with Applicants' specification could the structure of Applicants' claimed invention be attained, and any attempt to arrive at the structure of the claimed invention through study of the cited references is only reachable from improper hindsight analysis after viewing Applicants' own specification.

In response to this argument, the Office Action disagrees and states "Applicant has not discovered crosslinking PEI. Chemical crosslinking is well known in the art." Respectfully, Applicants do not assert to have "discovered crosslinking PEI." Applicants

assert to have discovered what is claimed, as a whole. Applicants' respectfully submit that when the cited references are viewed in their entirety, one skilled in the art utilizing common sense would not be led to Applicants' claimed invention.

As such, Applicants submit that independent claims 1 and 22 patentably define over the references. Additionally, Applicants submit that the dependent claims may further define over the cited references for the reasons noted in Applicants' prior submission dated May 28, 2009, pg. 11, first full paragraph – pg. 15. Particularly, Applicants' submit that Sebag et al. fails to disclose utilizing a crosslinking agent to facilitate crosslinking the polydentate compound as claimed by Applicants in claims 9-12. Additionally, regarding claims 13-16 and 26-28, Applicants' submit that Connolly fails to disclose utilizing high surface area particles as a carrier for the complex.

It is believed that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested. Examiner Arnold is invited and encouraged to telephone the undersigned, however, should any issues remain after consideration of this Response.

Please charge any additional fees required by this Response to Deposit Account No. 04-1403.

Respectfully submitted,

DORITY & MANNING, P.A.



Ryan P. Harris
Registration No. 58,662
P.O. Box 1449
Greenville, SC 29602
Telephone: (864) 271-1592
Facsimile: (864) 233-7342

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Date